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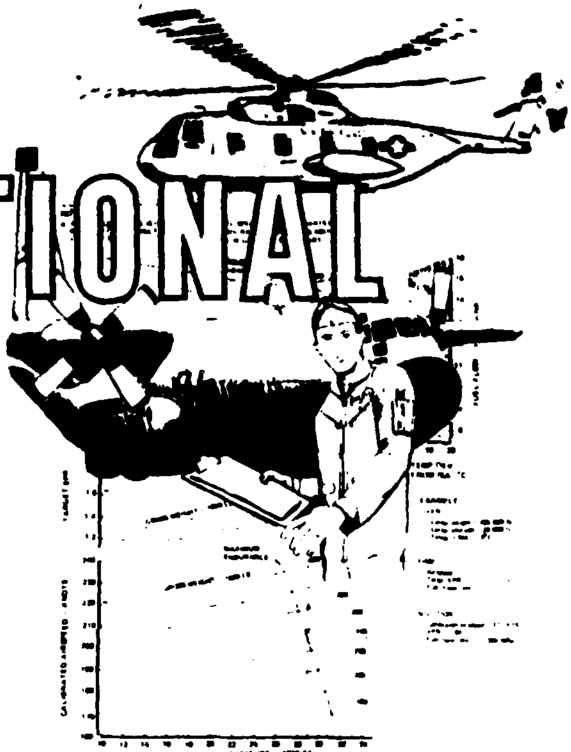

OCCUPATIONAL SURVEY REPORT

FLIGHT ENGINEER

AFSC 113X0B/C

AFPT 90-113-455

NOVEMBER 1988

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OCCUPATIONAL ANALYSIS PROGRAM
USAF OCCUPATIONAL MEASUREMENT CENTER
AIR TRAINING COMMAND
RANDOLPH AFB, TEXAS 78150-5000

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PREFACE

This Occupational Survey Report (OSR) presents the results of a detailed Air Force occupational survey of the Flight Engineer (AFSC 113X0B/C) career ladder, consisting of Helicopter (B-shredout), and Performance Qualified (C-shredout) personnel. Authority for conducting occupational surveys is contained in AFR 35-2. Computer products used in this report are available for use by operations and training officials.

The survey instrument for this project was developed by First Lieutenant John F. Foytlin, Inventory Developer. Ms Rebecca Hernandez provided computer support for the project. First Lieutenant Jose E. Caussade, Occupational Analyst, analyzed the data and wrote the final report. Administrative support was provided by Ms Linda Sutton. This report has been reviewed by Lieutenant Colonel Charles D. Gorman, Chief, Airman Analysis Branch, USAF Occupational Measurement Center.

Copies of this report are distributed to Air Staff sections, major commands, and other interested training and management personnel (see Distribution on page i). Additional copies are available upon request to the USAF Occupational Measurement Center, Attention: Chief, Occupational Analysis Division (OMY), Randolph Air Force Base, Texas 78150-5000.

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SUMMARY OF RESULTS

1. SURVEY COVERAGE: Survey results are based on responses from 2,021 AFSC 113X0B/C personnel (193 B-shred personnel and 1,637 C-shred members). In addition, 147 9-skill level members and 44 CEM Code individuals were also included in the sample.

2. SPECIALTY STRUCTURE: Flight Engineers clearly separated into two distinct jobs: Helicopter Flight Engineers (B-shred) and Performance Qualified Flight Engineers (C-shred). This finding confirms the distinctiveness of each shred. Within each job, several "job variations" were uncovered. These variations primarily broke out by aircraft in the C-shred job and by mission in the B-shred job. Though several tasks appear to be commonly performed between the two jobs, the knowledges and skills needed to do the tasks and jobs differ greatly.

3. CAREER LADDER PROGRESSION: Each shred displays a high degree of similarity in the tasks performed throughout their respective skill-level progressions. In other words, many of the tasks performed by 3-skill level members are also done at the senior skill levels (7-, 9-, and CEM Code). Even CEM Code qualified individuals still spend the majority of their job time performing technical duties. Some differentiation was noted, however, in the Duty AFSC prefixes held by career ladder members, with 3-/5-skill level individuals primarily having an A prefix and senior skill level members usually carrying the K or M prefix.

4. TRAINING ANALYSIS: Each shred's Specialty Training Standard (STS) and the C-shred's Task and Objectives Document (TOD) were analyzed against career ladder data. All documents were very well supported by survey data. Several areas in each STS, though performed by first-assignment personnel, were not coded for training at the 3-skill level. Three-skill level proficiency codes need to be examined to ensure those applicable areas are best left for follow-on training. Additionally, each training document had several unreferenced tasks needing examination for possible inclusion.

5. JOB SATISFACTION: Very high levels of job satisfaction were noted in both shreds. Little change was found in job satisfaction between the present and previous surveys.

6. IMPLICATIONS: The two shreds were clearly distinct, breaking out into two separate jobs. Career ladder progression was atypical with senior skill level individuals still performing many of the same tasks done at the junior skill levels. Job satisfaction indicators were very high among members of both shreds. Career ladder training documents were well supported by survey data. Proficiency codes and unreferenced tasks need review.

OCCUPATIONAL SURVEY REPORT
FLIGHT ENGINEER CAREER LADDER
(AFSC 113X0B/C)

INTRODUCTION

This report summarizes the results of an occupational survey of the Flight Engineer career ladder (AFSC 113X0). This specialty is divided into two shredouts. B-shred personnel are qualified to perform Flight Engineer duties on helicopters, while C-shred individuals are Performance Qualified, performing their duties on fixed-winged aircraft. The survey was originally requested by HQ MAC/DOT to determine the feasibility of merging the two shreds. Since the time of the request, that proposal has been dropped. Presently, B-shred personnel are interested in occupational survey data to create a new Specialty Training Standard (STS) and a 3-skill level course. Separate OSRs were previously conducted for each shred. The B-shred Occupational Survey Report was published in December 1982, while the C-shred OSR was done in June 1983. Keywords: Job analysis, Personnel development, Air Force training, Skills. (SDW)

Background

Flight Engineers are responsible for performing preflight, inflight, thruflight, and postflight inspections; computing aircraft performance data; performing nonscheduled maintenance of aircraft away from the home station; and maintaining aircraft forms. They also assist the pilot in operating and monitoring engine and aircraft systems controls. Additionally, Helicopter Flight Engineers perform duties as gunner, scanner, hoist operator, and cargo sling operator.

The AFSC 113X0B/C career ladder is a lateral ladder requiring prior qualification at the 5- or 7-skill level in the 111, 112, 114, 411, 423, 452X4, 452X5, 454, or 457 career fields. Personnel can also enter the career ladder by possessing a valid Federal Aviation Agency (FAA) Flight Engineer certificate with a jet or turboprop rating or a valid FAA aircraft and power plant license.

Historically, the B-shred has gone through several changes to its present structure. From 1970 to 1979, Helicopter Flight Engineers were the aircrew prefix of the AFSC 431X0 Helicopter Mechanic specialty. On 31 October 1979, they were converted into the Enlisted Aircrew Operations career field and became AFSC 113X0B. At that time, entry into the B-shred was opened to all airmen from basic military training. On 1 February 1988, like the C-shred, the B-shred was changed to a lateral shredout. Fixed-winged Flight Engineers were designated AFSC 435X0 personnel from 1967 to 1975 when these flight engineers were redesignated AFSC 113X0.

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Up until April 1988, B-shred 3-skill level training was provided by ATC at Sheppard AFB. The last class of active duty personnel, however, graduated in October 1987. In May 1988, responsibility for entry-level training was given to MAC, with the initial training program being moved to Kirtland AFB. Currently, the MAC course is being developed, with a tentative start date of January 1989. OSR data will be used by MAC personnel to firm up the B-shred STS and to help develop appropriate course content.

Follow-on aircraft-specific qualification training is conducted at Kirtland AFB for UH-1, HH-3, and HH-53 helicopters. HH-53H (PAVE LOW) qualification training is given at Hurlbert Field, while Eglin AFB provides Flight Engineer training on HH-60 helicopters.

Initial C-shred training is given in a 7-week, 2-day Basic Flight Engineer (BFE) Course at Altus AFB. MAC also carries responsibility for training in this shred. The BFE course is very general, primarily teaching ground instruction on aerodynamic factors of aircraft performance, mission planning, and performance data computations. More detailed aircraft-specific training is provided during follow-on qualification training given at locations dependent on the aircraft to which the individual is assigned:

E-3 personnel go to Tinker AFB
C-130 personnel go to Little Rock AFB
C-135 personnel go to McClellan AFB
C-5 and C-141 personnel stay at Altus AFB
E-4 and KC-10 personnel go to their operational units for training

SURVEY METHODOLOGY

Survey Development

Data for this survey were collected using USAF Job Inventory AFPT 90-113-455, dated October 1987. After reviewing pertinent career ladder publications and tasks from previous survey instruments, the inventory developer prepared a preliminary task list. This task list was then refined and validated through personal interviews with 75 subject-matter experts at 13 different bases to ensure a comprehensive sample of the various functions performed within the AFSC 113X0B/C career ladder. The locations selected for visits and the reasons for their selection are listed below:

BASE VISITED	REASON FOR VISIT
Sheppard AFB TX	Former Technical Training Center for AFSC 113X0B basic course.
Kirtland AFB NM	Provides follow-on training for helicopter flight training.

Indian Springs AAF NV	Utilizes UH-1 helicopters and supports Nellis range activities
Hurlburt Fld FL	Provides training for special operations and unconventional warfare missions
Eglin AFB FL	Conducts HH-60 training and utilizes HC-130 combat rescue aircraft
Andrews AFB MD	Have Special Assignment Airlift Missions (SAAMS), which includes VIP support
Dover AFB DE	Strategic airlift involving C-5 aircraft
McGuire AFB NJ	Have C-141 aircraft performing Primary Nuclear Airlift Force (PNAF), Strategic Airlift, and Special Air Missions
Offutt AFB NE	Base hosts E-4 Airborne Command Post wing
Tinker AFB OK	AWACS wing with E3A and EC-135 aircraft
Altus AFB OK	Technical Training Center for fixed-wing Flight Engineers
Keesler AFB MS	EC-130 Tactical Air Operations and WC-130 Weather Tracking missions
Barksdale AFB LA	Utilizes KC-10 air refueling aircraft

The final job inventory consisted of 1,044 tasks divided into 24 functional areas or duties. The inventory also contained a background section which includes questions on job title, mission, aircraft qualification, grade, and time in the career field (TICF).

Survey Administration

From November 1987 through April 1988, survey control officers at Consolidated Base Personnel Offices worldwide distributed the inventory to AFSC 113X0B/C personnel. Participants were selected from a computer-generated mailing list provided by the Air Force Human Resources Laboratory.

To complete the survey, each incumbent first answered a series of background questions, then marked the tasks he or she performed. Finally, the incumbent rated each task performed according to the relative time spent performing that task. Ratings range from 1 (a very small amount of time spent) to 9 (a very large amount of time spent). As part of the computer analysis, all of an incumbent's ratings are combined and the total is assumed to represent 100 percent of the individual's time on the job. Each rating is then divided by this total and multiplied by 100 to give the relative percent time spent for each task. Using these figures, analysis compares tasks in terms of the relative percent time spent performing them.

Survey Sample

A total of 2,974 incumbents were selected to complete the job inventory. Excluded from this list were personnel in training, hospital, or PCS status. This list of eligible personnel included an accurate representation across major commands (MAJCOM). Table 1 reflects the distribution by MAJCOM and shred of personnel assigned to the career ladder as of September 1987 and of respondents in the survey sample. The 2,021 respondents in the final sample represent 61 percent of the total assigned AFSC 113X0B/C personnel.

Task Factor Administration

In addition to collecting task performance data, part of the survey administration process involves collecting task factor ratings of task difficulty (TD) and training emphasis (TE). These ratings are collected from senior NCOs randomly selected to represent their career ladder, and are processed separately from task performance data.

Task difficulty is defined as the length of time required for the average job incumbent to learn to do a task. To complete the TD booklet, each senior NCO rated inventory tasks with which they were familiar on a 9-point scale, ranging from extremely low relative difficulty (a rating of 1) to extremely high relative difficulty (a rating of 9). Separate ratings were computed for each shredout. The interrater reliability of the TD data provided by 29 B-shred NCOs was .90. The 44 C-shred NCOs providing TD ratings had an interrater reliability of .94. These interrater reliabilities indicate good degrees of agreement. Each of these sets of TD ratings was adjusted to give a rating of 5.00 to a task of average difficulty, with a standard deviation of 1.00. The TD ratings provide a rank-ordered listing of the tasks in the inventory by degree of difficulty.

Training emphasis refers to the importance of structured training (through resident technical schools, field training detachments, formal OJT, etc.) of particular tasks for first-assignment personnel. Individuals completing TE booklets rated tasks on a 10-point scale, ranging from a blank (no training emphasis) to 9 (extremely heavy training required). The TE ratings provide a rank-ordered listing of tasks from high to low training emphasis. As was the case with TD ratings, separate ratings were computed for each shredout.

The interrater reliability for the 25 NCOs in the B-shred was .93. The average TE rating was 2.66, with a standard deviation of 1.95. Tasks rated above 4.61 are considered high in training emphasis for AFSC 113X0B first-assignment personnel. The 44 C-shred TE raters had an interrater reliability of .96, with an average TE rating of 2.22 and a standard deviation 1.90. Tasks above 4.12 are considered high in training emphasis for C-shred first-assignment personnel. These TE interrater reliabilities indicated very good degrees of agreement.

When used in conjunction with other information, such as percent members performing, TD and TE ratings can provide insight into training requirements.

TABLE 1

COMMAND DISTRIBUTION OF SURVEY SAMPLE

COMMAND	AFSC 113X0B PERCENT OF ASSIGNED	AFSC 113X0B PERCENT OF SAMPLE	AFSC 113X0C PERCENT OF ASSIGNED	AFSC 113X0C PERCENT OF SAMPLE	AFSC 11399/00 PERCENT OF ASSIGNED	AFSC 11399/00 PERCENT OF SAMPLE
MAC	75%	76%	87%	90%	84%	84%
TAC	12%	9%	5%	4%	3%	2%
SAC	*	*	5%	3%	5%	4%
AFSC	5%	6%	2%	2%	4%	5%
AFLC	0%	0%	*	*	1%	2%
USAFE	6%	8%	*	*	*	*
AF ELEM EUR	0%	0%	*	*	1%	2%
AF ELEM OTHER	0%	0%	*	*	0%	0%

	AFSC 113X0B	AFSC 113X0C	AFSC 11399/00
Total Assigned	391	2,611	311
Total Eligible Selected for Survey**	285	2,406	284
Total in Sample	192	1,635	191
Percent of Assigned in Sample	49%	63%	61%
Percent of Eligible Selected in Sample	67%	68%	67%

* Indicates less than 1 percent
** Excludes persons in PCS status, hospital, or less than 6 weeks on the job

Such insight may help validate lengthening or shortening portions of instruction supporting AFSC-needed knowledges or skills.

SPECIALTY JOBS
(Career Ladder Structure)

An important function of the USAF Occupational Analysis Program is examining a career ladder's structure. Based on incumbent responses to the survey, analysis identifies groups of incumbents spending similar amounts of time performing similar tasks. Individuals performing many of the same tasks and spending similar amounts of time on those tasks group together to describe a job performed in the career ladder. In this way, analysis identifies the basic structure of the career ladder, in terms of the jobs performed, and their relationship to each other. This analysis provides a foundation for reviewing other aspects of the career ladder, such as personnel classification, AFR 39-1 Specialty Descriptions, and training considerations.

Specialty Structure Overview

The Flight Engineer specialty structure cleanly broke out into two distinct jobs: Helicopter Flight Engineers (B-shred) and Performance Qualified Flight Engineers (C-shred). Several "job variations" existed within each job. Job variations are clearly identifiable functions within a job that are not different enough to be broken out as separate jobs. In the Performance Qualified Flight Engineer job, these variations primarily broke out by aircraft. Helicopter Flight Engineers, on the other hand, had variations based mostly on mission. The two jobs and the several variations within those jobs share many common tasks dealing with, for example, computing performance data and performing general aircrew functions. This gives the impression of a great deal of similarity between the two jobs and among the different aircraft. Conversations with subject-matter experts, however, indicate that the knowledges and skills needed to perform a task on one aircraft can be very different from those needed to perform the same task on another aircraft. In the following discussion, the stage (STO) or group (GPO) number refers to computer-printed information; the number of personnel in the group is represented by the letter N. Figure 1 illustrates the jobs identified in this survey.

I. PERFORMANCE QUALIFIED FLIGHT ENGINEERS (ST00042, N=1,742)

II. HELICOPTER FLIGHT ENGINEERS (GP00110, N=185)

Ninety-five percent of the survey respondents grouped into the above jobs. The remainder of the sample did not perform functions similar enough to group together or performed so few tasks in the inventory that their job could not be described.

AFSC 113X0B/C SPECIALTY JOBS

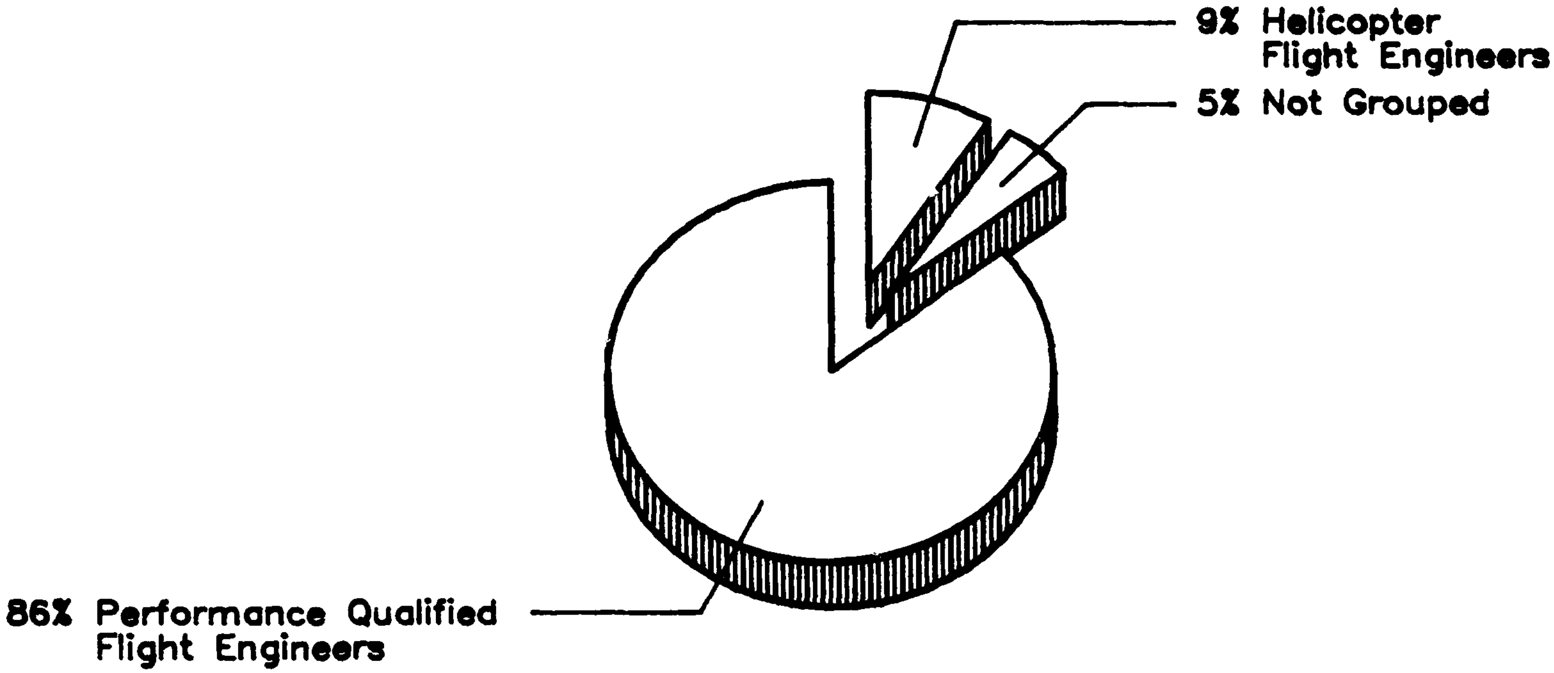

Figure 1

Group Descriptions

The following paragraphs briefly describe the different jobs identified in the analysis. Table 2 provides selective background data on these jobs. For a more detailed listing of representative tasks and a summary of background data on these jobs, see Appendix A.

I. PERFORMANCE QUALIFIED FLIGHT ENGINEERS (ST0042). Personnel in this job perform visual inspections and operate and monitor engine and aircraft systems controls, panels, and indicators on fixed-wing aircraft. Duties accounting for the largest percentages of their total job time include: performing environmental system functions (14 percent), general aircrew functions (10 percent), power plant system functions (10 percent), and electrical and instrument system functions (8 percent). Their job requires performing a number of different functions and tasks. As such, this job averages a very large number of tasks (394 tasks). Representative tasks include:

compute takeoff and landing data (TOLD)
operate interphone systems
monitor fuel consumption
review AFTO Forms 781 series for aircraft discrepancies
operate air-conditioning systems
perform preflight inspection of cockpit or cabin compartments

These personnel average almost 7 years TICF. Most were DAFSC 11370C personnel (60 percent). MAC was the largest utilizing command, employing 89 percent of personnel in this job.

As mentioned above, several job variations were identified within this job. Most of these variations broke out by aircraft. These variations included C-141, C-130, C-5, KC-10, E-3, C-137, and C-135 series aircraft. While they are all Performance Qualified Flight Engineers, the skills needed to work on each aircraft system are different. Other notable job variations included a group of Performance Qualified Instructors stationed at Altus AFB, Standards and Evaluation Personnel, and senior-level supervisors.

II. HELICOPTER FLIGHT ENGINEERS (GP00110). This job of 185 individuals, accounting for 9 percent of the total sample, perform Flight Engineer functions on helicopters. These include many of the same tasks performed by Performance Qualified Flight Engineers, including computing performance data, performing visual checks, and monitoring and operating aircraft systems. Helicopter Flight Engineer personnel also perform tasks dealing with cargo and weapons systems. Most stated their primary mission as being combat rescue and recovery or special mission. They perform a large job averaging 296 tasks. Representative tasks include:

TABLE 2

SELECTED BACKGROUND DATA FOR SPECIALTY JOBS

	PERFORMANCE QUALIFIED FLIGHT ENGINEERS	HELICOPTER FLIGHT ENGINEERS
NUMBER IN GROUP	1,742	185
PERCENT OF SAMPLE	86%	9%
AVERAGE NUMBER OF TASKS	394	296
MAJCOM (PERCENT):**		
MAC	89%	76%
TAC	4%	9%
SAC	3%	0%
AFSC	2%	6%
AFLC	*	0%
USAFE	*	9%
AF ELEM EUR	*	0%
AF ELEM OTHER	*	0%
DAFSC (PERCENT):		
11330B	*	9%
11550B	*	41%
11370B	*	45%
11330C	5%	0%
11350C	24%	*
11370C	60%	1%
11399	8%	2%
11300	2%	1%
AVERAGE TICF (MOS)	84	85
PERCENT FIRST ASSIGNMENT	33%	36%

* Less than 1 percent
** Only predominant MAJCOMs displayed

perform aircrew scanning duties
compute takeoff and landing data (TOLD)
perform preflight inspection of aircraft panels, locks, or fasteners
perform preflight inspection of main rotor or tail rotor assemblies
perform preflight inspection of life support, survival or personal equipment
perform preflight inspection of cargo

Personnel in this job average 7 years TICF. Forty-five percent were DAFSC 11370B personnel, while 41 percent were qualified at the 5-skill level in the B-shred. Due to MAC employing the majority of Air Force helicopters, most job incumbents were utilized by MAC (76 percent).

As with the first job described, this job contains several job variations. These included Pave Low Helicopter Flight Engineers, Special Assignment Helicopter Flight Engineers, Range Support Flight Engineers, Tactical Airlift Flight Engineers (many at a TAC unit at Shaw AFB, now disbanded), Special Operations Flight Engineers, and Standards and Evaluation Personnel.

Comparison of Specialty Jobs

A quick review of the tasks performed by these two jobs shows a high degree of commonality. Both jobs involve many of the same tasks on particular aircraft systems. These include computing TOLD, operating interphone systems, and performing a wide variety of inspections. Conversations with subject-matter experts, however, indicate that the knowledges and skills needed to perform these commonly performed tasks are very different. There were also several tasks performed that were specific to one job. These differences revolve around the fact that fixed-winged aircraft and helicopters are distinct aircraft with different systems, thus necessitating specific requirements for Flight Engineers to do their job. One major difference concerns performing environmental system functions. Performance Qualified Flight Engineers spend much of their total job time (14 percent) working with aircraft pressurization systems, air-conditioning, and other environmental system tasks. Helicopter Flight Engineers, on the other hand, work chiefly on anti-ice and cabin heater systems. Additionally, as would be expected, few B-shred personnel work on MADARS or propellers.

Helicopter Flight Engineers, on the other hand, often work as a type of "loadmaster" dealing with cargo slings and winches. They also work with rescue hoists, which often goes along with their mission. These flight engineers, unlike their C-shred counterparts, are also likely to work with weapons systems and often perform special mission functions. Additionally, fixed-winged Flight Engineers do not deal with rotor systems.

As stated in the previous section, the job structure of the career ladder broke out along existing shreds, with several identifiable job variations within each. As noted, Helicopter Flight Engineer job variations tended to form by mission. In the Performance Qualified Flight Engineer job, however, these variations primarily formed by aircraft. Most aircraft employ systems which distinguish what a Flight Engineer does on one aircraft, as opposed to on another aircraft. Examples of aircraft specific systems include:

- C-5: Malfunction Detection Analysis and Recoding Subsystem (MADARS) and landing gear kneeling system
- C-130: Propellers
- C-135: Cartridge Start Systems
- KC-10: Air Force Satellite Communication (AFSATCOM) System
- E-3: Rotodome Drive Mechanisms

There were also some distinguishing characteristics regarding seniority within the shreds. Helicopter Flight Engineers qualified on the HH-53 tended to be the most senior in the B-shred. Performance Qualified Flight Engineers qualified on VC-135, VC-137, and KC-10 aircraft, on the other hand, were among the most senior in the C-shred.

Comparison to Previous Survey

Separate OSRs were conducted for each shredout during 1982-1983. The results of this survey were compared to those two previous surveys. Overall, the two previous surveys reported findings similar to those stated in the present job structure analysis. All three surveys identified one large cluster (or job) of Flight Engineers. Within this large group, several variations were found, usually broken out by aircraft system. The two previous surveys also discussed additional jobs separate from the one large job. These additional jobs are now encompassed under one of the two large jobs reported in the present survey. They include a group of Trainers in the AFSC 113X0C OSR and H-1 Support Mission Flight Engineers, H-3 Mid-Air Retrieval System (MARS) Operators, and Staff Managers in the B-shred OSR. The present survey also includes data on KC-10 and HH-60 aircraft, which have only become operational since the last surveys.

ANALYSIS OF 113X0B/C DAFSC GROUPS

In addition to analyzing the career ladder structure, examining skill levels is helpful in understanding a career ladder. The DAFSC analysis compares skill levels, highlighting differences in the tasks performed at the different levels. This information can be useful in examining how well various career ladder documents, such as AFR 39-1 Specialty Descriptions and the Specialty Training Standards (STS), reflect what career ladder personnel are actually doing in the field.

The most marked finding in this analysis is the similarity of tasks performed throughout the skill-level progression. In other words, many tasks performed by 3-skill level individuals are also being performed at the senior skill levels (7-skill level and above). While there is an increase in managerial responsibilities at these upper skill levels, the majority of each skill level's total job time is spent performing technical flight engineer tasks. This was true of skill levels in both the B- and C-shredouts. Among 9- and CEM Code skill level personnel, for example, only 12 percent of their total job time is spent on supervisory and administrative duties. Relative time spent in each duty by skill level is presented in Table 3 for B-shred skill levels and Table 4 for those in the C-shred and 9- and CEM Code skill levels. These tables clearly show the little change that occurs in duty time across the skill levels. The 3- and 5-skill levels in each shred have been combined due to their similarity. The same is true for the 9-skill level and CEM Code. Tables 5 through 9 display representative tasks for each shred across these skill level groups.

This type of skill-level progression, while atypical of most other Air Force specialties, is typical of aircrew specialties. Most career ladders exhibits a skill-level progression showing an increase in supervisory and administrative responsibilities as one progresses from the 3- through the 7-skill level and above. This would go along with the expected managerial duties one acquires through experience and seniority in a career ladder. Personnel in this career ladder, however, exhibit very little increase in these areas. This could be due to the importance given to flying, even at the very senior skill levels.

One notable trend identified through the DAFSC analysis process is the change in Duty AFSC prefixes as career ladder members progress in skill level qualification. The career ladder carries three major Duty AFSC prefixes. The A prefix designates Aircrew, while the K prefix is Aircrew Instructor, and the M prefix is Aircrew Standardization/Flight Examiner. In both shreds, the majority of 3- and 5-skill level personnel carry the A prefix. At the 7-, 9-, and CEM Code skill levels, however, the majority of career ladder incumbents carry the K or M prefix. Table 10 displays the prefixes carried by skill level groups in each shred.

AFR 39-1 SPECIALTY DESCRIPTIONS FOR AFSC 113X0B/C

Occupational survey data are also used to examine classification issues. By comparing those jobs performed in a career ladder to the specialty descriptions, judgments can be made about the descriptions' completeness and accuracy.

AFR 39-1 Specialty Descriptions are intended to give a very broad description of the responsibilities held by the various skill levels within a career ladder. When compared to survey data, the AFR 39-1 Specialty Description for the Flight Engineer Specialist (DAFSCs 11310, 11330, 11350), dated 31 October 1988, accurately reflects the duties and tasks being accomplished

TABLE 3

RELATIVE TIME SPENT ON DUTIES BY DAFSC 113X0B SKILL-LEVEL MEMBERS

DUTIES	DAFSC 11330/50B (N=101)	DAFSC 11370B (N=91)
A ORGANIZING AND PLANNING	*	2
B DIRECTING AND IMPLEMENTING	3	4
C INSPECTING AND EVALUATING	*	2
D TRAINING	2	4
E PERFORMING ADMINISTRATIVE FUNCTIONS	3	3
F PERFORMING CROSS UTILIZATION TRAINING (CUT) FUNCTIONS	2	1
G PERFORMING GENERAL AIRCREW FUNCTIONS	21	15
H PERFORMING GENERAL MAINTENANCE FUNCTIONS	3	3
I PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	4	4
J PERFORMING AUXILIARY SYSTEM FUNCTIONS	8	7
K PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM FUNCTIONS	4	4
L PERFORMING COMMUNICATION AND NAVIGATION SYSTEM FUNCTIONS	5	5
M PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM FUNCTIONS	5	6
N PERFORMING ENVIRONMENTAL SYSTEM FUNCTIONS	4	4
O PERFORMING FLIGHT CONTROL SYSTEM FUNCTIONS	2	3
P PERFORMING FUEL SYSTEM FUNCTIONS	5	5
Q PERFORMING LANDING GEAR AND BRAKE SYSTEM FUNCTIONS	3	3
R PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) FUNCTIONS	*	0
S PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM FUNCTIONS	2	2
T PERFORMING POWER PLANT SYSTEM FUNCTIONS	7	9
U PERFORMING PROPELLER SYSTEM FUNCTIONS	*	*
V PERFORMING ROTOR, TRANSMISSION, OR DRIVE SYSTEM FUNCTIONS	3	3
W PERFORMING SPECIAL MISSION FUNCTIONS	7	6
X PERFORMING EMERGENCY PROCEDURE FUNCTIONS	5	5

* Less than 1 percent

TABLE 4

RELATIVE TIME SPENT ON DUTIES BY DAFSC 113X0C AND 11399/00 SKILL-LEVEL MEMBERS

DUTIES	DAFSC 11330/50C (N=536)	DAFSC 11370C (N=1,099)	DAFSC 11399/00 (N=191)
A ORGANIZING AND PLANNING	*	*	2
B DIRECTING AND IMPLEMENTING	1	2	4
C INSPECTING AND EVALUATING	*	1	3
D TRAINING	*	2	3
E PERFORMING ADMINISTRATIVE FUNCTIONS	3	3	4
F PERFORMING CROSS UTILIZATION TRAINING (CUT) FUNCTIONS	*	*	*
G PERFORMING GENERAL AIRCREW FUNCTIONS	11	10	9
H PERFORMING GENERAL MAINTENANCE FUNCTIONS	3	3	2
I PERFORMING MISSION PLANNING AND PERFORMANCE DATA COMPUTATIONS	3	3	3
J PERFORMING AUXILIARY SYSTEM FUNCTIONS	3	3	3
K PERFORMING AUXILIARY POWER UNIT (APU) AND GAS TURBINE COMPRESSOR (GTC) SYSTEM FUNCTIONS	6	6	6
L PERFORMING COMMUNICATION AND NAVIGATION SYSTEM FUNCTIONS	6	6	5
M PERFORMING ELECTRICAL AND INSTRUMENT SYSTEM FUNCTIONS	9	8	7
N PERFORMING ENVIRONMENTAL SYSTEM FUNCTIONS	15	14	13
O PERFORMING FLIGHT CONTROL SYSTEM FUNCTIONS	3	3	3
P PERFORMING FUEL SYSTEM FUNCTIONS	5	6	5
Q PERFORMING LANDING GEAR AND BRAKE SYSTEM FUNCTIONS	6	6	6
R PERFORMING MALFUNCTION DETECTION ANALYSIS AND RECORDING SUBSYSTEM (MADARS) FUNCTIONS	*	*	*
S PERFORMING PNEUDRAULIC OR HYDRAULIC SYSTEM FUNCTIONS	5	5	5
T PERFORMING POWER PLANT SYSTEM FUNCTIONS	10	10	9
U PERFORMING PROPELLER SYSTEM FUNCTIONS	2	2	2
V PERFORMING ROTOR, TRANSMISSION, OR DRIVE SYSTEM FUNCTIONS	*	*	*
W PERFORMING SPECIAL MISSION FUNCTIONS	*	*	*
X PERFORMING EMERGENCY PROCEDURE FUNCTIONS	5	5	5

* Less than 1 percent

TABLE 5

REPRESENTATIVE TASKS PERFORMED BY DAFSC 11330B/50B PERSONNEL

TASKS		PERCENT PERFORMING (N=101)
G207	PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	100
G204	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	99
G197	PERFORM AIRCREW SCANNING DUTIES	97
G203	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	96
G224	REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	96
P657	MONITOR FUEL CONSUMPTION	96
I277	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	95
G186	OPEN OR CLOSE CREW ENTRANCE DOORS	95
G205	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT STRUCTURES FOR EROSION, CORROSION, DAMAGE, OR CRACKS	94
X1036	PERFORM PRACTICE OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	93
G169	BRIEF AIRCRAFT COMMANDER ON WEIGHT AND BALANCE STATUS	90
G206	PERFORM PREFLIGHT INSPECTION OF CARGO	90
G210	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EXIT SYSTEMS	90
G192	PARTICIPATE IN CREW OPERATION DEBRIEFINGS	89
G209	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, OR FIRE EXTINGUISHERS	89
G182	LOAD OR OFFLOAD CREW GEAR	88
G198	PERFORM FIREGUARD DUTIES	88
I281	COMPUTE WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	88
G175	FASTEN CARGO NETS OR TIE DOWN STRAPS	86
E130	COMPLETE DD FORMS 365 SERIES (RECORD OF WEIGHT AND BALANCE PERSONNEL)	85
G195	PARTICIPATE IN PREMISSION BRIEFINGS	85
L410	MONITOR ULTRA HIGH FREQUENCY (UHF) RADIOS	84
L411	MONITOR VERY HIGH FREQUENCY (VHF) RADIOS	84
V956	PERFORM PREFLIGHT INSPECTION OF MAIN ROTOR OR TAIL ROTOR ASSEMBLIES	83
W1003	PERFORM REMOTE SITE LANDINGS, HOVER OR TAKE-OFFS	79

TABLE 6

REPRESENTATIVE TASKS PERFORMED BY DAFSC 11370B PERSONNEL

TASKS		PERCENT PERFORMING (N=91)
G197	PERFORM AIRCREW SCANNING DUTIES	98
I277	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	98
G204	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	97
G207	PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	96
G203	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	96
G192	PARTICIPATE IN CREW OPERATION DEBRIEFINGS	95
G224	REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	95
I281	COMPUTE WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	95
G171	BRIEF AIRCRAFT COMMANDER OR MAINTENANCE PERSONNEL ON SYSTEM MALFUNCTIONS	93
G169	BRIEF AIRCRAFT COMMANDER ON WEIGHT AND BALANCE STATUS	92
P657	MONITOR FUEL CONSUMPTION	92
G195	PARTICIPATE IN PREMISSION BRIEFINGS	91
G209	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, OR FIRE EXTINGUISHERS	91
X1027	PERFORM, PRACTICE, OR SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	91
X1036	PERFORM PRACTICE OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	91
G172	BRIEF PASSENGERS ON FLIGHT MISSION	90
G175	FASTEN CARGO NETS OR TIE DOWN STRAPS	90
G199	PERFORM FUNCTIONAL FLIGHT (FCF) DUTIES	89
G206	PERFORM PREFLIGHT INSPECTION OF CARGO	89
V956	PERFORM PREFLIGHT INSPECTION OF MAIN ROTOR OR TAIL ROTOR ASSEMBLIES	89
V955	MONITOR MAIN ROTOR OR TAIL ROTOR SYSTEM OPERATIONS	88
V954	MONITOR MAIN ROTOR OR TAIL ROTOR SYSTEM OPERATIONS	86
L403	MONITOR INTERPHONE SYSTEM OPERATIONS	85
L410	MONITOR ULTRA HIGH FREQUENCY (UHF) RADIOS	85
L411	MONITOR VERY HIGH FREQUENCY (VHF) RADIOS	84

TABLE 7

REPRESENTATIVE TASKS PERFORMED BY DAFSC 11330C/50C PERSONNEL

TASKS		PERCENT PERFORMING (N=536)
I277	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	99
N536	OPERATE AIR-CONDITIONING SYSTEMS	99
N538	OPERATE AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	99
G209	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, OR FIRE EXTINGUISHERS	98
G186	OPEN AND CLOSE CREW ENTRANCE DOORS	97
G224	REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	97
G228	VERIFY SAFETY PIN OR STREAMER REMOVAL PRIOR TO FLIGHT OR INSTALLED AFTER FLIGHT	97
I273	COMPUTE CLIMB, CRUISE OR DESCENT DATA	97
N519	MONITOR AIR-CONDITIONING SYSTEMS	97
N521	MONITOR AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	97
G203	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	96
G207	PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	96
P657	MONITOR FUEL CONSUMPTION	96
G193	PARTICIPATE IN MAINTENANCE DEBRIEFINGS	95
M468	MONITOR ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	94
K365	OPERATE APU OR GTC BLEED AIR SYSTEMS	93
M472	MONITOR TRANSFORMER RECTIFIER (TR) SYSTEM OPERATIONS	92
S797	MONITOR HYDRAULIC SYSTEM OPERATIONS	92
L416	OPERATE INTERPHONE SYSTEMS	90
M474	OPERATE ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	90
N525	MONITOR ENVIRONMENTAL BLEED AIR SYSTEMS	90
L411	MONITOR VERY HIGH FREQUENCY (VHF) RADIOS	89
T870	MONITOR POWER PLANT INSTRUMENT SYSTEMS	89
L410	MONITOR ULTRA HIGH FREQUENCY (UHF) RADIOS	88
G197	PERFORM AIRCREW SCANNING DUTIES	86

TABLE 8

REPRESENTATIVE TASKS PERFORMED BY DAFSC 11370C PERSONNEL

TASKS		PERCENT PERFORMING (N=1,099)
I277	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	98
N536	OPERATE AIR-CONDITIONING SYSTEMS	98
N538	OPERATE AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	98
G186	OPEN AND CLOSE CREW ENTRANCE DOORS	97
G193	PARTICIPATE IN MAINTENANCE DEBRIEFINGS	97
G207	PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	97
G209	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, OR FIRE EXTINGUISHERS	97
G224	REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	97
N519	MONITOR AIR-CONDITIONING SYSTEMS	97
N521	MONITOR AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	97
P657	MONITOR FUEL CONSUMPTION	97
I273	COMPUTE CLIMB, CRUISE OR DESCENT DATA	96
S797	MONITOR HYDRAULIC SYSTEM OPERATIONS	96
G228	VERIFY SAFETY PIN OR STREAMER REMOVAL PRIOR TO FLIGHT OR INSTALLED AFTER FLIGHT	95
G203	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	95
M468	MONITOR ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	95
M472	MONITOR TRANSFORMER RECTIFIER (TR) SYSTEM OPERATIONS	94
N525	MONITOR ENVIRONMENTAL BLEED AIR SYSTEMS	94
M474	OPERATE ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	93
T868	MONITOR POWER PLANT FUEL SYSTEMS	93
L416	OPERATE INTERPHONE SYSTEMS	92
T870	MONITOR POWER PLANT INSTRUMENT SYSTEMS	92
L410	MONITOR ULTRA HIGH FREQUENCY (UHF) RADIOS	90
L411	MONITOR VERY HIGH FREQUENCY (VHF) RADIOS	90
G197	PERFORM AIRCREW SCANNING DUTIES	88

TABLE 9

REPRESENTATIVE TASKS PERFORMED BY DAFSC 11399/00 PERSONNEL

TASKS		PERCENT PERFORMING (N=191)
G186	OPEN AND CLOSE CREW ENTRANCE DOORS	98
G224	REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	98
I277	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	98
G207	PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	97
I273	COMPUTE CLIMB, CRUISE OR DESCENT DATA	96
P657	MONITOR FUEL CONSUMPTION	96
G193	PARTICIPATE IN MAINTENANCE DEBRIEFINGS	95
G203	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	95
G209	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, OR FIRE EXTINGUISHERS	95
M468	MONITOR ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	95
M472	MONITOR TRANSFORMER RECTIFIER (TR) SYSTEM OPERATIONS	95
N519	MONITOR AIR-CONDITIONING SYSTEMS	95
N536	OPERATE AIR-CONDITIONING SYSTEMS	95
N538	OPERATE AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	95
N521	MONITOR AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	94
G228	VERIFY SAFETY PIN OR STREAMER REMOVAL PRIOR TO FLIGHT OR INSTALLED AFTER FLIGHT	93
L416	OPERATE INTERPHONE SYSTEMS	92
T868	MONITOR POWER PLANT FUEL SYSTEMS	92
T870	MONITOR POWER PLANT INSTRUMENT SYSTEMS	91
B47	INTERPRET POLICIES, DIRECTIVES, OR PROCEDURES FOR SUBORDINATES	79
E141	MAINTAIN CURRENT STATUS OF FLIGHT MANUALS, SAFETY AND OPERATIONAL SUPPLEMENTS, AND FLIGHT CREW CHECKLISTS	78
B54	SUPERVISE FLIGHT ENGINEER TECHNICIANS (AFSC 11370C)	77
B20	COMPILE DATA FOR REPORTS	72
C67	EVALUATE PERSONNEL FOR COMPLIANCE WITH PERFORMANCE STANDARDS	72
A11	ESTABLISH PERFORMANCE STANDARDS	67

TABLE 10

DISTRIBUTION OF AFSC 113X0B/C, 11399, AND 11300 PRIMARY DAFSC PREFIXES
(PERCENT RESPONDING)

	PREFIXES		
DAFSC	A	K	M
11330B	94	6	0
11350B	80	14	5
11370B	32	32	35
11330C	96	2	0
11350C	91	6	*
11370C	47	37	15
11399	46	15	38
11300	32	7	61

* Less than 1 percent

at those skill levels. Performing the various visual inspections and operating and monitoring aircraft systems is well covered for both the helicopter and fixed-wing shreds. One duty which could be more clearly stated is performing communication and navigation system functions. Much the same can be said about the Flight Engineer Technician (DAFSC 11370) Specialty Description, dated 1 February 1988. The strong technical orientation present even at this skill level is clearly apparent. There is, however, again no clear mention of their work on communication and navigation systems.

The AFR 39-1 Specialty Description for Flight Engineer Superintendent (DAFSC 11399 and CEM Code 11300), dated 1 February 1988, accurately portrays the managerial aspects of these skill levels. They are the managers of the career ladder, with many responsibilities in those areas. The majority of their job time, however, is still spent performing flight engineer tasks. As explained in the DAFSC analysis section, only 12 percent of their total job time is spent performing managerial duties. The Specialty Description should more accurately reflect the number of technical tasks still performed by this senior group of individuals.

AFSC 113X0B/C TRAINING ANALYSIS

Information gathered from occupational survey data is also used to assist in the development and review of formal training programs or training documents, such as Specialty Training Standards (STS) and Plans of Instruction (POI). For the AFSC 113X0C Basic Flight Engineer (BFE) Course, a Task and Objectives Document (TOD) serves essentially the same purpose as a POI. A particularly important factor used in analyzing these training documents is the percentage of an appropriate group, such as first-assignment (1-48 months TICF) personnel, performing tasks. In addition, the secondary task factors of TE and TD ratings (as explained in the Task Factor Administration section) provide useful information. Technical school personnel have matched nonmanagerial inventory tasks to appropriate STS or TOD sections to facilitate the use of occupational survey data in ascertaining the relevance and completeness of these documents. Computer listings which display the STS or TOD with matched tasks and survey data are used in the analysis to show which sections of the STS or TOD are most relevant to the career ladder. Survey data may also be used to show which tasks not matched to these documents may need to be included due to the extent to which they are performed in the career ladder and their importance to training. To aid in any further detailed review of training documents, these computer displays have been forwarded to the technical school. In addition to a summary of that information, this section contains an analysis of the first-assignment personnel in each shred. Figure 2 shows the distribution of first-assignment personnel across the jobs discussed in the SPECIALTY JOBS section of this report.

Training Emphasis and Task Difficulty Data

The objective of collecting TE and TD ratings is to develop rank-ordered listings of tasks in terms of importance for first-assignment training and in terms of difficulty. Training emphasis and task difficulty data are included

AFSC 113X0B/C FIRST ASSIGNMENT JOBS

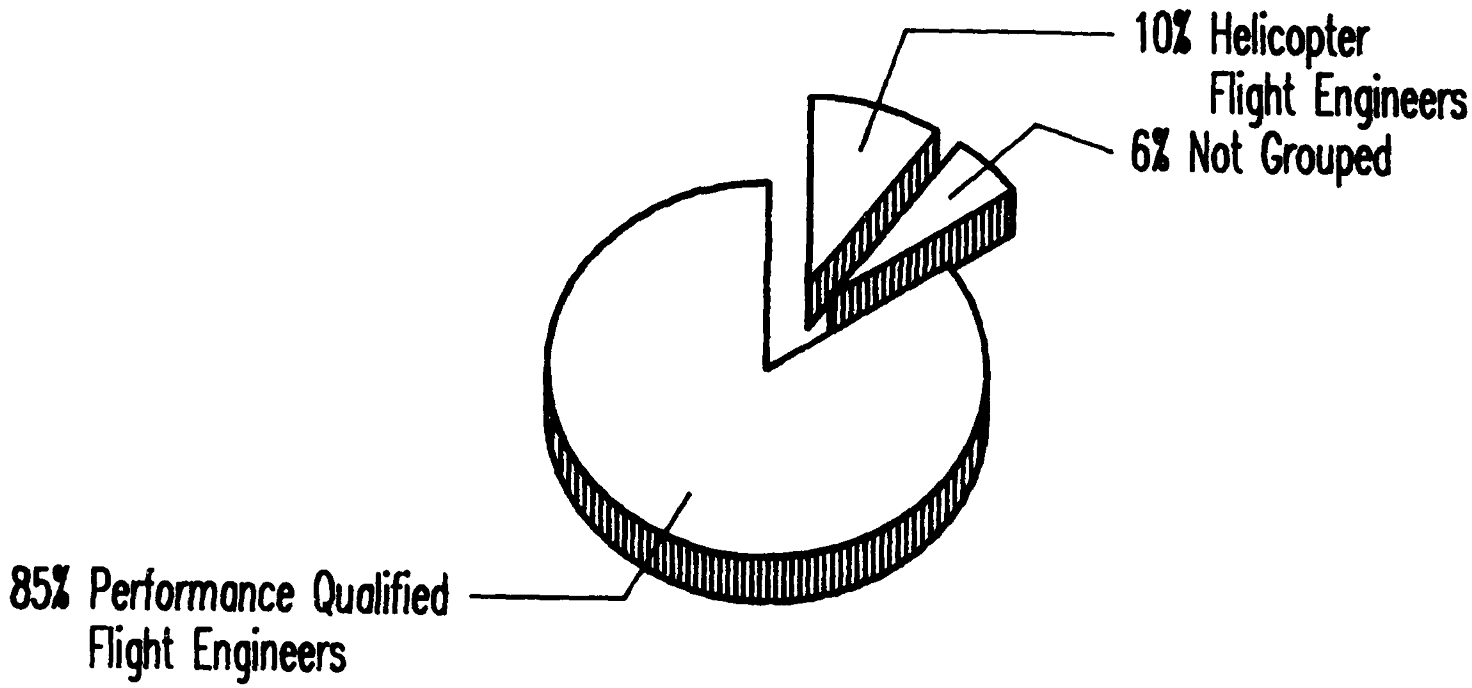

Figure 2

for each shred's tasks in their respective Analysis and Training Extracts. (For a more detailed explanation of both types of ratings, see Task Factor Administration in the SURVEY METHODOLOGY section.) Tasks performed by moderate to high percentages of personnel may warrant resident technical training. TE and TD ratings, composed of the opinions of experienced career ladder personnel, are secondary factors that may assist training developers in deciding which tasks should be emphasized for entry-level training. Those tasks receiving high task factor ratings, but performed by low percentages of first-assignment personnel, may be more appropriately planned for OJT programs within the career ladder. Low task factor ratings may highlight tasks best left out of training for new personnel, but this decision must be weighed against percentages of personnel performing the tasks and other task considerations. A final product useful in making training decisions is Automated Training Indicators (ATI). ATI takes first-assignment, TE, and TD data and computes training decisions based on Atch 1, ATCR 52-22.

AFSC 113X0B Training Issues

A. AFSC 113X0B First-Assignment Personnel. First-assignment AFSC 113X0B personnel account for 39 percent of the B-shred sample with 74 members. These junior Helicopter Flight Engineers perform many of the same tasks done by more senior career ladder members. This is a very homogeneous group with most individuals performing common flight engineer tasks, such as aircrew scanning duties, computing TOLD, monitoring various aircraft systems, and performing several preflight inspections. They perform a very large job averaging 265 tasks. A list of representative tasks is included in Table 11.

B. AFSC 113X0B Specialty Training Standard (STS). An STS is intended to provide comprehensive coverage of tasks performed by career ladder personnel. To assess the effectiveness of the tentative AFSC 113X0B STS, dated October 1988, STS sections were compared to survey data from career ladder groups, such as TICF and DAFSC groups. Sections containing managerial, general information, or knowledge areas were not reviewed. In addition to examining how well survey data supported STS items, 3-skill level proficiency codes were examined to determine how well they correspond to first-assignment airmen percent performing levels. Lastly, analysis explored areas lacking coverage in the STS and possibly warranting inclusion.

Overall, the AFSC 113X0B STS is very well supported by survey data. The majority of performance items were matched to tasks performed by 20 percent or more of B-shred personnel. Only four STS items were found to be performed by under 20 percent of a career ladder group, and thus were not supported. These are listed in Table 12. These items deal with completing AFTO Form 22, composite tool kits, aircraft inventory records, and servicing auxiliary power units. Subject-matter experts should examine these areas and consider eliminating them due to the low percentages of individuals performing those functions.

Reviewing the proficiency codes at the 3-skill level shows how well STS coding corresponds to first-assignment airmen responsibilities. Items matched to tasks performed by 30 percent or more of first-assignment personnel

TABLE 11

REPRESENTATIVE TASKS PERFORMED BY FIRST-ASSIGNMENT
(1-48 MONTHS TICF) AFSC 113X0B PERSONNEL

TASKS		PERCENT PERFORMING (N=74)
G207	PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	100
G204	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	99
G224	REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	99
G203	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	97
G186	OPEN OR CLOSE CREW ENTRANCE DOORS	96
G197	PERFORM AIRCREW SCANNING DUTIES	96
I277	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	96
P657	MONITOR FUEL CONSUMPTION	96
G205	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT STRUCTURES FOR EROSION, CORROSION, DAMAGE, OR CRACKS	95
G206	PERFORM PREFLIGHT INSPECTION OF CARGO	95
X1036	PERFORM PRACTICE OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	95
I281	COMPUTE WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	93
G209	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, OR FIRE EXTINGUISHERS	92
G175	FASTEN CARGO NETS OR TIE DOWN STRAPS	91
G210	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EXIT SYSTEMS	91
G212	PERFORM PREFLIGHT INSPECTION OF LIFE SUPPORT, SURVIVAL, OR PERSONAL EQUIPMENT	91
G222	RELEASE CARGO NETS OR TIE DOWN STRAPS	91
G182	LOAD OR OFFLOAD CREW GEAR	89
X1040	PERFORM, PRACTICE, OR SIMULATE TOTAL ENGINE FAILURE EMERGENCY PROCEDURES	89
G169	BRIEF AIRCRAFT COMMANDER ON WEIGHT AND BALANCE STATUS	88
G192	PARTICIPATE IN CREW OPERATION DEBRIEFINGS	88
V956	PERFORM PREFLIGHT INSPECTION OF MAIN ROTOR OR TAIL ROTOR ASSEMBLIES	86
L411	MONITOR VERY HIGH FREQUENCY (VHF) RADIOS	85
E130	COMPLETE DD FORMS 365 SERIES (RECORD OF WEIGHT AND BALANCE PERSONNEL)	81
V954	MONITOR MAIN ROTOR OR TAIL ROTOR SYSTEM OPERATIONS	80

TABLE 12

AFSC 113X0B STS ITEMS NOT SUPPORTED BY OSR DATA

STS REFERENCE/TASKS		TRN EMP*	FIRST-ASSIGNMENT (N=74)	5-SKILL LEVEL (N=84)	7-SKILL LEVEL (N=91)	TSK DIF**
4c(2) INITIATE AFTO FORM 22	- B					
E128 COMPLETE AFTO FORMS 22 (TECHNICAL ORDER SYSTEM PUBLICATION IMPROVEMENT REPORT AND REPLY)		1.88	11%	10%	10%	4.79
8a(3) HAND TOOLS- COMPOSITE TOOL KITS PROGRAM	- -					
F153 INVENTORY COMPOSITE TOOL KITS (CTK)		2.12	14%	15%	9%	3.24
9c AIRCRAFT AND EQUIPMENT RECORDS- AIRCRAFT INVENTORY RECORD	- B					
H249 PERFORM AIRCRAFT PRETRANSFER OR POST TRANSFER INSPECTIONS		.64	11%	6%	14%	6.08
12j(4) AUXILIARY POWER UNIT- SERVICE	- A					
K385 SERVICE APU OR GTC SYSTEMS		1.56	14%	11%	15%	3.86

* Training Emphasis has an average of 2.66 and a standard deviation of 1.95
** Task Difficulty has an average of 5.00 and a standard deviation of 1.00

normally should have a task performance or task knowledge proficiency code at the 3-skill level, unless other factors dictate otherwise. This would warrant inclusion in resident course training.

Several STS items were found supported by over 30 percent of first-assignment personnel, but with no proficiency code at the 3-skill level so as to allow for inclusion in a 3-skill level awarding training course. This could well be justified, however, due to the several follow-on courses teaching aircraft specific skills and knowledges. The role of 3-skill level qualification training in this career ladder is to teach the fundamental B-shred principles and basic performance skills needed for success in follow-on training. Subject-matter experts nevertheless should examine highly performed STS items to ensure they are indeed covered in follow-on training and to determine if any should be added to 3-skill level qualification training.

An additional area of analysis involves examining tasks not matched to any STS element. Unreferenced tasks performed by at least 20 percent of a career ladder group are performed to an extent great enough to be considered for inclusion in the STS. Table 13 lists several examples of tasks not referenced to any STS item. Several of them deal with special mission functions. Subject-matter experts should examine these and other unreferenced tasks to consider incorporating their functions in the STS.

AFSC 113X0C Training Issues

A. AFSC 113X0C First-Assignment Personnel. The 609 individuals in their first-assignment within the AFSC 113X0C shredout account for 37 percent of the sample of C-shred respondents. Like their B-shred counterparts, these airmen perform a very technical job, encompassing many of the same tasks done by more senior-level personnel. These tasks include computing performance data, performing environmental system functions, monitoring several types of aircraft systems, and performing the various necessary preflight inspections. AFSC 113X0C personnel perform a very large job averaging 340 tasks, some of which are listed in Table 14.

B. AFSC 113X0C Specialty Training Standard (STS). Like the B-shred STS, the C-shred Specialty Training Standard (dated August 1987) was compared to survey data to ascertain its soundness as a career ladder-wide training document. Sections dealing with managerial, general information, or knowledge areas were not reviewed. In addition to examining how well survey data supported STS items, 3-skill level proficiency codes and possible areas excluded from the STS were also reviewed.

As mentioned above, an STS item is supported by OSR data if the inventory tasks matched to that item are performed by 20 percent or more of TICF and/or DAFSC groups. Using this criterion, the AFSC 113X0C STS, like its B-shred counterpart, is very well supported by survey data. In other words, the majority of performance items were matched to tasks performed by 20 percent or more of AFSC 113X0C personnel.

TABLE 13

EXAMPLES OF TASKS NOT REFERENCED TO AFSC 113X0B STS

TASKS		TRN EMP*	FIRST-ASSIGNMENT (N=74)	5-SKILL LEVEL (N=84)	7-SKILL LEVEL (N=91)	TSK DIF**
G197	PERFORM AIRCREW SCANNING DUTIES	7.04	96%	99%	98%	4.84
G214	PERFORM SMALL ARMS QUALIFICATION	4.80	84%	87%	71%	4.54
I271	COMPUTE AIRCRAFT PERFORMANCE DATA FOR NONSTANDARD CONFIGURATIONS	5.56	73%	71%	85%	5.80
W970	DETERMINE LANDING ZONE FACTORS (HIGH/LOW RECONNAISSANCE)	6.60	73%	75%	75%	5.67
W991	PERFORM INSERTION OR EXTRACTION OPERATIONS	5.44	54%	56%	65%	6.45
W1003	PERFORM REMOTE SITE LANDINGS, HOVER OR TAKE-OFFS	6.76	73%	77%	78%	6.14
W1005	PERFORM SEARCH AND RESCUE (SAR) OPERATIONS	6.44	64%	67%	64%	6.49
W1007	PERFORM SIMULATED COMBAT OPERATIONS	6.12	62%	60%	71%	7.00
W1012	PERFORM WATER OPERATIONS	5.36	59%	52%	63%	6.24
W1014	RECONFIGURE AIRCRAFT FOR SPECIAL MISSIONS	5.12	59%	58%	70%	5.58
X1043	RECOMMEND CORRECTIVE ACTION FOR INFLIGHT EMERGENCY CONDITIONS	5.60	69%	68%	81%	6.40

* Training Emphasis has an average of 2.66 and a standard deviation of 1.95
** Task Difficulty has an average of 5.00 and a standard deviation of 1.00

TABLE 14

REPRESENTATIVE TASKS PERFORMED BY FIRST-ASSIGNMENT (1-48 MONTHS TICF) AFSC 113X0C PERSONNEL

TASKS		PERCENT PERFORMING (N=609)
I277	COMPUTE TAKEOFF AND LANDING DATA (TOLD)	99
N536	OPERATE AIR-CONDITIONING SYSTEMS	99
N538	OPERATE AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	99
G186	OPEN AND CLOSE CREW ENTRANCE DOORS	98
G209	PERFORM PREFLIGHT INSPECTION OF EMERGENCY EQUIPMENT, SUCH AS PARACHUTES, OXYGEN BOTTLES, OR FIRE EXTINGUISHERS	98
G224	REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	97
I273	COMPUTE CLIMB, CRUISE OR DESCENT DATA	97
N519	MONITOR AIR-CONDITIONING SYSTEMS	97
N521	MONITOR AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	97
G193	PARTICIPATE IN MAINTENANCE DEBRIEFINGS	96
G207	PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	96
G228	VERIFY SAFETY PIN OR STREAMER REMOVAL PRIOR TO FLIGHT OR INSTALLED AFTER FLIGHT	96
P657	MONITOR FUEL CONSUMPTION	96
G203	PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	95
M468	MONITOR ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	95
K365	OPERATE APU OR GTC BLEED AIR SYSTEMS	94
M472	MONITOR TRANSFORMER RECTIFIER (TR) SYSTEM OPERATIONS	93
S797	MONITOR HYDRAULIC SYSTEM OPERATIONS	93
N525	MONITOR ENVIRONMENTAL BLEED AIR SYSTEMS	91
L416	OPERATE INTERPHONE SYSTEMS	90
M474	OPERATE ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	90
T870	MONITOR POWER PLANT INSTRUMENT SYSTEMS	90
G197	PERFORM AIRCREW SCANNING DUTIES	89
L411	MONITOR VERY HIGH FREQUENCY (VHF) RADIOS	89
L410	MONITOR ULTRA HIGH FREQUENCY (UHF) RADIOS	88

A few STS items, however, were performed by under 20 percent of survey respondents. These unsupported items deal with aircraft-specific systems. For example, all the STS items in paragraph 34, MADARS SYSTEM, were unsupported by survey data. This finding could well be expected due to the fact that only C-5 Flight Engineers work on this system. Servicing propeller system (STS item 21F) is the other aircraft-specific (C-130) STS item not supported by survey data. Due to their aircraft uniqueness, these areas should perhaps be considered for coverage in a Job Qualification Standard (JQS), rather than in the STS.

The AFSC 113X0C STS is also similar to the B-shred STS with respect to 3-skill level proficiency codes. As with the B-shred STS, proficiency codes in the 3-skill level column were reviewed to ensure that items with high percentages of first-assignment personnel performing were coded, thus allowing for structured training. Examination of the STS revealed that the majority of STS items performed by 30 percent or more of first-assignment personnel had no 3-skill level proficiency code that would allow for structured training at that level.

The lack of 3-skill level proficiency codes is likely due to the diversity of aircraft utilized by C-shred personnel. The philosophy employed by training specialists in this shred for 3-skill level personnel is to only teach aircraft performance principles applicable to all aircraft. Personnel then get additional training at their follow-on aircraft qualification courses. There are, however, several STS areas dealing with aircraft system fundamental principles that are not coded at the 3-skill level. These areas, dealing with fuel, hydraulic, landing gear, environmental, and power plant systems, for example, could be taught to a level fundamental enough to give the student some exposure to the subject area. This "introduction" might better prepare these airmen for their follow-on training. Subject-matter experts should review all "principles" areas to determine if they should be taught to at least a knowledge level in the 3-skill level course.

A final area of analysis involves examining tasks not matched to any STS item. Tasks performed by 20 percent or more of a major group (i.e., TICF or DAFSC group), but unreferenced to the STS, should be considered for STS inclusion. Several tasks dealing with performing emergency procedure functions were not matched to the STS. Many of these were tasks performed by over 50 percent of a major group and had high TE and TD ratings. Examples of these and other unreferenced tasks are listed in Table 15.

C. AFSC 113X0C Task and Objectives Document (TOD). The Basic Flight Engineer (BFE) Course was reviewed in this analysis. This is a very general course primarily dealing with mission planning and computing performance data. Students are instructed in planning and computing various performance data, such as takeoff, climb, cruise, descent, and landing data. They are also taught to determine mission fuel requirements. With the assistance of training specialists from Altus AFB, the BFE Task and Objectives Document was matched to applicable inventory tasks. Computer printouts were then generated to display the results of the matching for use in analyzing the accuracy of the TOD.

TABLE 15

EXAMPLES OF TASKS NOT REFERENCED TO AFSC 113X0C STS

TASKS		TRN EMP*	FIRST-ASSIGNMENT (N=609)	5-SKILL LEVEL (N=439)	7-SKILL LEVEL (N=1099)	TSK DIF**
M476	OPERATE INSTRUMENT SYSTEMS	4.20	56%	59%	63%	4.51
P661	MONITOR FUEL LOGS	4.57	58%	62%	73%	4.57
T862	MONITOR POWER PLANT COMPRESSOR SECTION OPERATIONS	4.57	55%	55%	65%	4.40
T869	MONITOR POWER PLANT IGNITION SYSTEM OPERATIONS	4.68	72%	74%	78%	4.37
T880	OPERATE POWER PLANT FUEL SYSTEMS	4.61	61%	64%	64%	4.83
X1017	PERFORM, PRACTICE, OR SIMULATE APU OR GTC FIRE EMERGENCY PROCEDURES	6.20	84%	83%	84%	5.70
X1018	PERFORM, PRACTICE, OR SIMULATE BAILOUT PROCEDURES	4.20	50%	52%	49%	5.29
X1019	PERFORM, PRACTICE, OR SIMULATE CABIN FIRE PROCEDURES	6.39	76%	78%	79%	5.88
X1020	PERFORM, PRACTICE, OR SIMULATE DITCHING PROCEDURES	5.57	61%	66%	69%	5.70
X1021	PERFORM, PRACTICE, OR SIMULATE ELECTRICAL FIRE PROCEDURES, OTHER THAN CABIN FIRES	6.77	87%	87%	89%	6.56
X1022	PERFORM, PRACTICE, OR SIMULATE ELECTRICAL SYSTEM	6.45	88%	87%	89%	6.37
X1023	PERFORM, PRACTICE, OR SIMULATE EMERGENCY DRIFT-DOWN PROCEDURES	5.11	51%	51%	61%	5.37
X1024	PERFORM, PRACTICE, OR SIMULATE ENGINE FIRE, SEVERE DAMAGE, OR SEPARATION EMERGENCY PROCEDURES	6.64	88%	88%	89%	5.90
X1025	PERFORM, PRACTICE, OR SIMULATE ENGINE GROUND FIRE, EMERGENCY PROCEDURES	6.57	80%	81%	86%	5.86

* Training Emphasis has an average of 2.22 and a standard deviation of 1.90
** Task Difficulty has an average of 5.00 and a standard deviation of 1.00

TABLE 15 (CONTINUED)

EXAMPLES OF TASKS NOT REFERENCED TO AFSC 113X0C STS

TASKS		TRN EMP*	FIRST-ASSIGNMENT (N=609)	5-SKILL LEVEL (N=439)	7-SKILL LEVEL (N=1099)	TSK DIF**
X1026	PERFORM, PRACTICE, OR SIMULATE FUEL FLOW SYSTEM EMERGENCY PROCEDURES	6.25	68%	67%	79%	5.69
X1027	PERFORM, PRACTICE, OR SIMULATE HYDRAULIC SYSTEM EMERGENCY PROCEDURES	6.61	86%	87%	89%	5.86
X1028	PERFORM, PRACTICE, OR SIMULATE INFLIGHT DOOR WARNING EMERGENCY PROCEDURES	6.30	86%	85%	86%	5.60
X1029	PERFORM, PRACTICE, OR SIMULATE LANDING GEAR (LDG) EMERGENCY EXTENSION PROCEDURES	6.77	83%	84%	89%	6.34
X1030	PERFORM, PRACTICE, OR SIMULATE LDG WHEEL BRAKE EMERGENCY PROCEDURES	6.00	69%	71%	79%	6.07
X1034	PERFORM, PRACTICE, OR SIMULATE RAPID AIRCRAFT DEPRESSURIZATION EMERGENCY PROCEDURES	6.57	84%	85%	87%	5.81
X1035	PERFORM, PRACTICE, OR SIMULATE RAPID DESCENT PROCEDURES	5.45	59%	60%	66%	5.49
X1036	PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	6.30	91%	89%	89%	5.68
X1037	PERFORM, PRACTICE, OR SIMULATE SMOKE ELIMINATION PROCEDURES	6.68	85%	86%	88%	6.00
X1039	PERFORM, PRACTICE, OR SIMULATE THRUST REVERSER FAILURE EMERGENCY PROCEDURES	4.34	50%	49%	60%	5.66
X1040	PERFORM, PRACTICE, OR SIMULATE TOTAL ENGINE FAILURE EMERGENCY PROCEDURES	5.14	55%	57%	59%	6.28
X1041	PERFORM, PRACTICE, OR SIMULATE WING FLAP OR SLAT MALFUNCTION EMERGENCY PROCEDURES	6.05	79%	80%	85%	5.92

* Training Emphasis has an average of 2.22 and a standard deviation of 1.90
** Task Difficulty has an average of 5.00 and a standard deviation of 1.00

The subjects covered in the TOD are very well supported by survey data. All objectives are performed by high percentages of first-assignment personnel. This is probably due to the fact that only fundamental areas are covered in the TOD.

Due to the diversity of operational aircraft in the Air Force, different knowledges and skills are needed for qualification on each aircraft. For example, the skills needed to perform a task on one aircraft may be very different to those skills needed to do the same task on another aircraft. The BFE course is thus constructed to present a very general overview of the basic skills needed for successful follow-on training. Accordingly, the majority of specific career ladder training is provided in the various follow-on courses.

As with the STS, another part of the TOD analysis involves examining unreferenced tasks. As could well be anticipated, a great many tasks performed by high percentages of first-assignment airmen were not matched to the TOD. Because of their aircraft uniqueness, many of these unreferenced tasks may be better taught during aircraft-specific follow-on training. Training specialists nevertheless should examine these unreferenced tasks to determine the feasibility of including them in the BFE course.

MAJCOM ANALYSIS

Occupational survey data can be used to examine differences in duty and task performance data across major commands. Highlighting these differences may identify any specific needs MAJCOMs may have due to distinguishing performance functions.

The primary major command differences found among Helicopter Flight Engineers were dictated by the missions flown by helicopters in the different MAJCOMs. As stated in the SPECIALTY JOBS section, most Helicopter Flight Engineers listed their primary mission as being either "combat rescue and recovery" or "special mission." AFSC Helicopter Flight Engineers, however, principally fly "MARS" missions. USAFE Helicopter Flight Engineers, in units now disbanded, on the other hand, primarily flew "tactical airlift" missions.

Differences among the major commands utilizing Performance Qualified Flight Engineer personnel were primarily driven by the aircraft employed by that particular command. For example, 100 percent of the C-shred Flight Engineers utilized by USAFE are qualified on C-130 aircraft. Thus, flight engineer tasks specific to C-130 aircraft (i.e., propellers) are highly performed by career ladder members in this MAJCOM. In SAC, on the other hand, 98 percent of these C-shred Flight Engineers have qualification on KC-10s and thus have AFSATCOM and other KC-10 flight engineer tasks distinguishing the MAJCOM. As a final example, 100 percent of Performance Qualified Flight Engineers in Air Force Elements Europe are qualified on E-3 aircraft and perform those flight engineer tasks specific to that aircraft.

JOB SATISFACTION ANALYSIS

An examination of the job satisfaction indicators of each experience group provides some understanding of factors which may affect the job performance of AFSC 113X0B/C personnel. Job satisfaction indicators for AFSC 113X0B and 113X0C TICF groups are shown in Table 16. Job satisfaction indicators from the previous AFSC 113X0C survey were also analyzed to examine any changes in job satisfaction over time. The data are presented in Table 17. No analysis was done comparing previous to present B-shred job satisfaction data due to a lack of data in this area.

Five attitude questions covering job interest, perceived utilization of talents, perceived utilization of training, sense of accomplishment from the job, and reenlistment intentions provide indications of job satisfaction. Both shreds had very high positive responses for all the attitude questions (see Table 16). The majority of questions had positive responses of over 85-90 percent in each shred. This was the case with both the B- and C-shreds, which had comparable job satisfaction indicators, with one exception. The 49-96 months TICF B-shred group exhibited a noticeable decrease in all job satisfaction indicators. These indicators, however, were still high, and do increase to higher levels in the "96 months and above TICF" group.

Comparing job satisfaction data from the 1983 C-shred survey to the present 1988 survey data shows little change in job satisfaction over time (see Table 17). Data from both time periods show very high levels of job satisfaction.

IMPLICATIONS

As explained in the INTRODUCTION, this survey was originally requested by HQ MAC/DOT to examine the feasibility of combining the helicopter (B-shred) and performance qualified (C-shred) flight engineer shredouts. This proposal has since been dropped. The main purpose of the survey is now to gather data for use by training specialists at Kirtland AFB to develop a new AFSC 113X0B Specialty Training Standard and subsequent 3-skill level awarding course.

The two shreds each broke out into their own distinct jobs. Though many common tasks were performed across the two jobs, the knowledges and skills needed to do them differ greatly. A number of job variations were also noted within each job. These variations primarily broke out by aircraft in the Performance Qualified Flight Engineer job and by mission in the Helicopter Flight Engineer job. The career ladder depicts a typical aircrew specialty career ladder progression, displaying a high degree of similarity in tasks performed throughout the skill-level progression. Thus, individuals in the senior skill levels still perform many of the same tasks done at the junior skill levels. AFR 39-1 Specialty Job Descriptions appear to be generally descriptive at most skill levels. The DAFSC 11399/00 description, however, should more accurately portray the technical aspects present even at these senior levels.

TABLE 16

COMPARISON OF AFSC 113X0B/C TICF GROUP JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING)*

	1-48 MOS TICF		49-96 MOS TICF		97+ MOS TICF	
	AFSC 113X0B (N=74)	AFSC 113X0C (N=609)	AFSC 113X0B (N=59)	AFSC 113X0C (N=482)	AFSC 113X0B (N=59)	AFSC 113X0C (N=544)
EXPRESSED JOB INTEREST:						
INTERESTING	96	95	86	95	92	91
SO-SO	4	3	8	3	5	5
DULL	0	**	2	1	3	2
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	95	96	85	96	95	94
LITTLE OR NOT AT ALL	5	3	14	4	5	5
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECTLY	97	97	85	98	95	95
LITTLE OR NOT AT ALL	3	1	14	2	5	4
SENSE OF ACCOMPLISHMENT FROM WORK:						
SATISFIED	91	90	71	88	88	85
NEUTRAL	5	4	8	5	0	5
DISSATISFIED	4	3	19	7	12	9
REENLISTMENT INTENTIONS:						
WILL/PROBABLY WILL REENLIST	84	82	75	85	76	66
WILL NOT/PROBABLY WILL NOT REENLIST	11	15	15	8	7	10
WILL RETIRE	4	1	7	6	15	23

* Columns may not add to 100 percent due to nonresponse and rounding
** Denotes less than 1 percent

TABLE 17

AFSC 113X0C CURRENT AND PREVIOUS JOB SATISFACTION INDICATORS
(PERCENT MEMBERS RESPONDING)*

	1-48 MOS TICF		49-96 MOS TICF		97+ MOS TICF	
	1988 (N=609)	1983 (N=731)	1988 (N=482)	1983 (N=544)	1988 (N=544)	1983 (N=415)
EXPRESSED JOB INTEREST:						
INTERESTING	95	94	95	91	91	92
SO-SO	3	4	3	5	5	4
DULL	**	2	1	2	2	2
PERCEIVED USE OF TALENTS:						
FAIRLY WELL TO PERFECTLY	96	97	96	95	94	92
LITTLE OR NOT AT ALL	3	2	4	5	5	7
PERCEIVED USE OF TRAINING:						
FAIRLY WELL TO PERFECTLY	97	98	98	96	95	95
LITTLE OR NOT AT ALL	1	1	2	4	4	4
SENSE OF ACCOMPLISHMENT FROM WORK:						
SATISFIED	90	92	88	87	85	85
NEUTRAL	4	4	5	4	5	3
DISSATISFIED	3	3	7	8	9	10
REENLISTMENT INTENTIONS:						
WILL/PROBABLY WILL REENLIST	82	86	85	82	66	58
WILL NOT/PROBABLY WILL NOT REENLIST	15	10	8	7	10	10
WILL RETIRE	1	3	6	10	23	31

* Columns may not add to 100 percent due to nonresponse and rounding
** Denotes less than 1 percent

Each shred's STS and the C-shred TOD were analyzed against a task matching provided by subject-matter experts from their respective training centers. Based on the results of the analysis, both STSs and the TOD were very well supported by survey data. Several tasks not referenced to these documents, nevertheless, need to be examined for possibly correcting any deficiencies in the training documents.

One issue that needs addressing is the lack of 3-skill proficiency codes in both the B- and C-shred Specialty Training Standards. The many STS items identified without these proficiency codes result in excluding those functions from being required for 3-skill level qualification, even though they are performed by high percentages of first-assignment personnel.

This finding may be justified, however, due to the nature of the career ladder. Three-skill level qualification training for both shreds is atypical of that given in most other Air Force career ladders. AFSC 113X0B/C training at this level consists of teaching the fundamental principles and core performance areas needed for success in the more extensive follow-on training. This is primarily due to the specificity and uniqueness of each aircraft system. This lack of 3-skill level proficiency codes should still be reviewed to ensure they are indeed covered and best left for follow-on training.

APPENDIX A

TABLE A1

PERFORMANCE QUALIFIED FLIGHT ENGINEERS
ST00042

GROUP SIZE: 1,742 PERCENT OF SAMPLE: 86%

AVERAGE TICF: 84 MONTHS

DAFSC:	11330B:	*	11330C:	5%	11399:	8%
	11350B:	*	11350C:	24%	11300:	2%
	11370B:	*	11370C:	60%		

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS	PERCENT MEMBERS PERFORMING
COMPUTE TAKEOFF AND LANDING DATA (TOLD)	99
OPERATE AIR-CONDITIONING SYSTEMS	99
OPERATE AUTOMATIC AIRCRAFT PRESSURIZATION SYSTEMS	99
MONITOR FUEL CONSUMPTION	98
REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	98
PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	97
MONITOR ELECTRICAL SYSTEMS, OTHER THAN INTERIOR OR EXTERIOR LIGHTING SYSTEMS	97
COMPUTE CLIMB, CRUISE, OR DESCENT DATA	97
MONITOR HYDRAULIC SYSTEM OPERATIONS	96
PERFORM PREFLIGHT INSPECTION OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	96
VERIFY SAFETY PIN OR STREAMER REMOVAL PRIOR TO FLIGHT OR INSTALLED AFTER FLIGHT	96
COMPUTE AIRCRAFT EMERGENCY PERFORMANCE DATA	95
MONITOR TRANSFORMER RECTIFIER (TR) SYSTEM OPERATIONS	95
MONITOR ANTI-ICE SYSTEMS	94
MONITOR ENVIRONMENTAL BLEED AIR SYSTEMS	94
MONITOR POWER PLANT FUEL SYSTEMS	94
OPERATE APU OR GTC BLEED AIR SYSTEMS	94
OPERATE INTERPHONE SYSTEMS	93
MONITOR POWER PLANT INSTRUMENT SYSTEMS	93
PERFORM PREFLIGHT INSPECTION OF LDG TIRES	93
MONITOR VERY HIGH FREQUENCY (VHF) RADIOS	92
PERFORM PREFLIGHT INSPECTION OF LDG BRAKE OR ANTISKID SYSTEMS	92
PERFORM PREFLIGHT INSPECTION OF EMERGENCY EXIT SYSTEMS	92
COMPUTE TIME, DISTANCE, OR FUEL USING PERFORMANCE DATA FORMULAS AND CHARTS	91

* Less than 1 percent

TABLE A2

HELICOPTER FLIGHT ENGINEERS
GP00110

GROUP SIZE: 185 PERCENT OF SAMPLE: 9%

AVERAGE TICF: 85 MONTHS

DAFSC:			
11330: 9%	11330: 0%	11399: 2%
11350: 41%	11350: *	11300: 1%
11370: 45%	11370: 1%	

THE FOLLOWING ARE IN DESCENDING ORDER BY PERCENT MEMBERS PERFORMING:

TASKS	PERCENT MEMBERS PERFORMING
PERFORM AIRCREW SCANNING DUTIES	99
PERFORM PREFLIGHT INSPECTION OF AIRCRAFT PANELS, LOCKS, OR FASTENERS	99
PERFORM PREFLIGHT INSPECTION OF COCKPIT OR CABIN COMPARTMENTS	99
COMPUTE TAKEOFF AND LANDING DATA (TOLD)	98
OPEN OR CLOSE CREW ENTRANCE DOORS	98
PERFORM PREFLIGHT INSPECTION OF AIRCRAFT FOR FLUID LEAKAGE	98
REVIEW AFTO FORMS 781 SERIES FOR AIRCRAFT DISCREPANCIES	97
BRIEF AIRCRAFT COMMANDER ON WEIGHT AND BALANCE STATUS	96
COMPUTE WEIGHT AND BALANCE DATA USING CHARTS, LOAD ADJUSTERS, OR CALCULATORS	96
MONITOR FUEL CONSUMPTION	96
PERFORM, PRACTICE, OR SIMULATE SINGLE ENGINE FAILURE EMERGENCY PROCEDURES	95
FASTEN CARGO NETS OR TIE DOWN STRAPS	92
PERFORM PREFLIGHT INSPECTION OF CARGO	92
PERFORM PREFLIGHT INSPECTION OF LIFE SUPPORT, SURVIVAL, OR PERSONAL EQUIPMENT	92
PERFORM PREFLIGHT INSPECTION OF MAIN ROTOR OR TAIL ROTOR ASSEMBLIES	92
PERFORM FIREGUARD DUTIES	91
PERFORM PREFLIGHT INSPECTION OF AIRCRAFT STRUCTURES FOR EROSION, CORROSION, DAMAGE, OR CRACKS	91
DIRECT LOADING OR OFFLOADING OF CARGO	89
COMPLETE DD FORMS 365 SERIES (RECORD OF WEIGHT AND BALANCE PERSONNEL	88
MONITOR TRANSMISSION OR DRIVE SYSTEM OPERATIONS	88
BALANCE CARGO	86
MONITOR ULTRA HIGH FREQUENCY (UHF) RADIOS	86

* Less than 1 percent